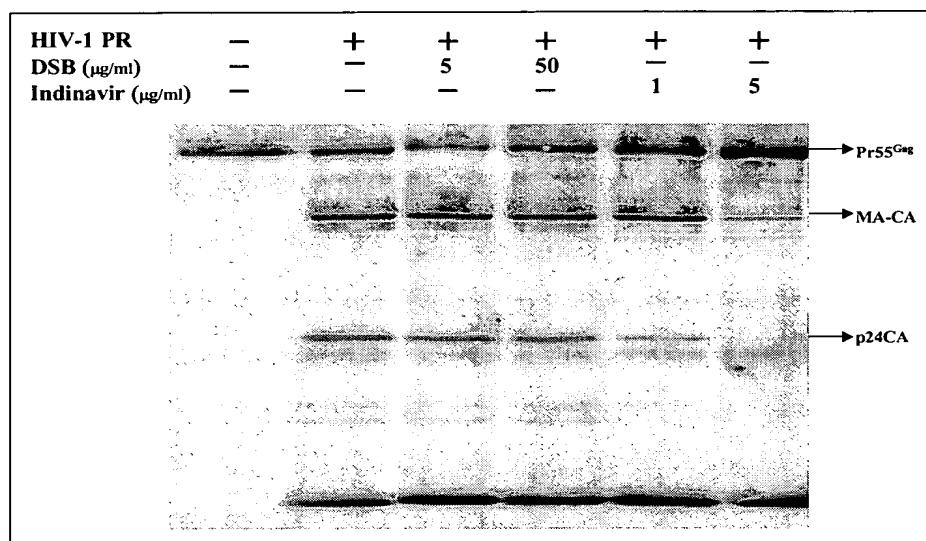


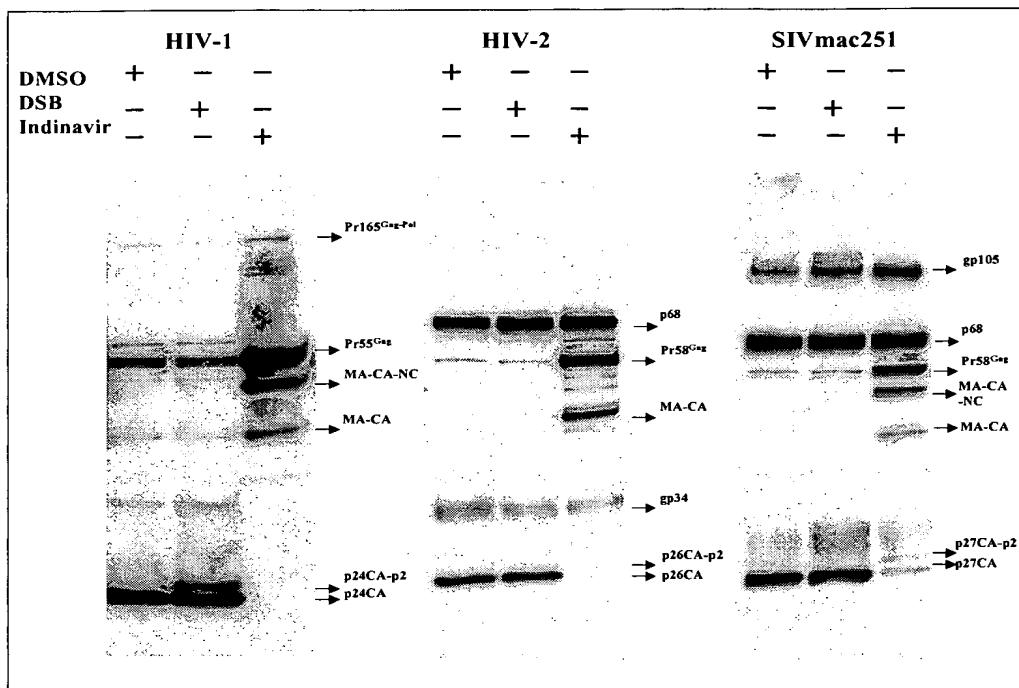
BEST AVAILABLE COPY

FIGURE 1



BEST AVAILABLE COPY

FIGURE 2



BEST AVAILABLE COPY

FIGURE 3

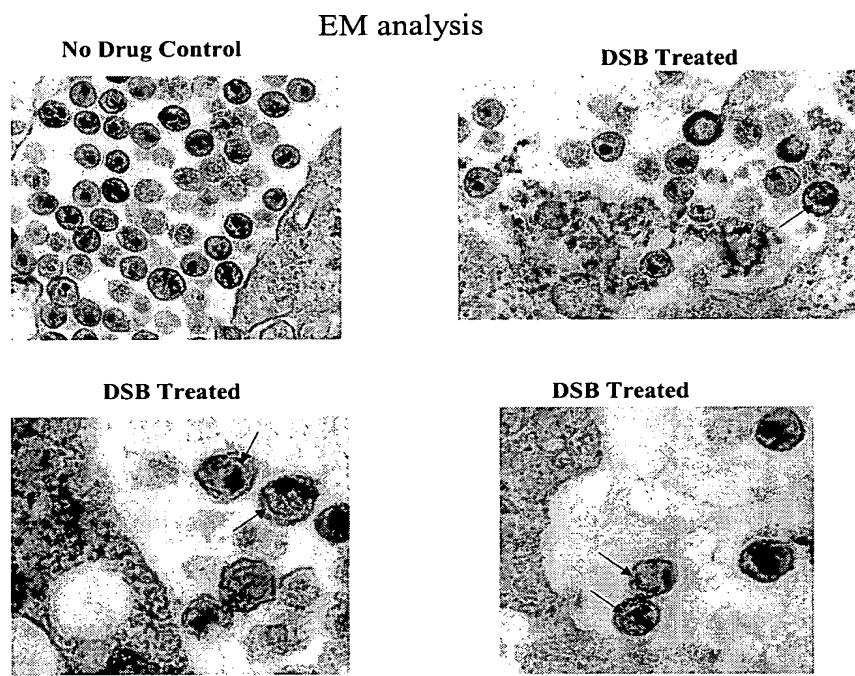


FIGURE 4

CA **SP1**

Gag sequence #1: K-A-R-V-L/I-|A-E-A-M-S (SEQ ID NO: 1)

Gag sequence #2: K-A-R-V-L-|V-E-A-M-S (SEQ ID NO: 2)

Gag sequence #3: K-A-R-V-I-|A-E-V-M-S (SEQ ID NO: 3)

FIGURE 5
(SEQ ID NO: 4)

ATGGGTGCGAGAGCGTCGGTATTAAGCGGGGGAGAATTAGATAAATGG
GAAAAAAATTGGTTAACGCCAGGGGGAAAGAAACAATATAAACTAAAA
CATATAGTATGGCAAGCAGGGAGCTAGAACGATTGCAGTTAATCCT
GGCCTTTAGAGACATCAGAAGGCTGTAGACAAATACTGGACAGCTA
CAACCATCCCTCAGACAGGATCAGAAGAACTTAGATCATTATATAAT
ACAATAGCAGTCCTCTATTGTGTGCATCAAAGGATAGATGTAAAAGAC
ACCAAGGAAGCCTTAGATAAGATAGAGGAAGAGCAAAACAAAAGTAAG
AAAAAGGCACAGCAAGCAGCAGCTGACACAGGAAACAACAGCCAGGTC
AGCCAAAATTACCCCTATAGTGCAGAACCTCCAGGGGCAAATGGTACAT
CAGGCCATATCACCTAGAACCTTAAATGCATGGTAAAAGTAGTAGAA
GAGAAGGCTTCAGCCCCAGAAGTAATAACCCATGTTTCAGCATTATCA
GAAGGGGCCACCCCCACAAGATTAAATACCATGCTAAACACAGTGGGG
GGACATCAAGCAGCCATGCAAATGTTAAAAGAGACCATAATGAGGAA
GCTGCAGAATGGGATAGATTGCATCCAGTGCATGCAGGGCCTATTGCA
CCAGGCCAGATGAGAGAACCAAGGGGAAGTGACATAGCAGGAACTACT
AGTACCCCTCAGGAACAAATAGGATGGATGACACATAATCCACCTATC
CCAGTAGGAGAAATCTATAAAAGATGGATAATCTGGGATTAAATAAA
ATAGTAAGAATGTATAGCCCTACCAGCATTCTGGACATAAGACAAGGA
CCAAAGGAACCCCTTAGAGACTATGTAGACCGATTCTATAAAACTCTA
AGAGCCGAGCAAGCTTCACAAGAGGTAAAAAATTGGATGACAGAAACC
TTGTTGGTCCAAATGCGAACCCAGATTGTAAGACTATTTAAAGCA
TTGGGACCAGGAGCGACACTAGAAGAAATGATGACAGCATGTCAGGGA
GTGGGGGGACCCGGCATAAAGCAAGAGTTTGGTGAAGCAATGAGC
CAAGTAACAAATCCAGCTACCATAATGATAACAGAAAGGCAATTTAGG
AACCAAAGAAAGACTGTTAAGTGGCAATTGTGGCAAAGAAGGGCAC
ATAGCCA AAAATTGCAGGGCCCCTAGGAAAAAGGGCTGGAAATGT
GGAAAGGAAGGACACCAAATGAAAGATTGTAAGTACTGAGAGACAGGCTAAT
TTTTAGGGAAGATCTGGCCTTCCCACAAGGGAAAGGCCAGGGAAATTT
CTTCAGAGCAGACCAGAGCCNACAGCCCCACCAGAAGAGAGCTCAGG
TTTGGGGAAAGAGACAACAACTCCCTCTCAGAACAGCAGGAGCCGATAGAC
AAGGAACGTATCCTTAGCTCCCTCAGATCACTCTTGGCAGCGAC
CCCTCGTCACAATAAGATAGGGGGCAATTAAAGGAAGCTCTATTAG
ATACAGGAGCAGATGATACAGTATTAGAAGAAATGAATTGCCAGGAA
GATGGAAACCAAAATGATAGGGGGATTGGAGGTTTATCAAAGTAA
GACAGTATGATCAGATACTCATAGAAATCTGCAGGACATAAAAGCTATAG
GTACAGTATTAGTAGGACCTACACCTGTCAACATAATTGGAAAGAAATC
TGTTGACTCAGATTGGCTGCACTTAAATTCCCATTAGTCCTATTG
AGACTGTACCAAGTAAAGCCAGGAATGGATGGCCAAAAGTT

FIGURE 6
(SEQ ID NO: 5)

ATGGGTGCGAGAGCGTCGGTATTAAGCBBBBBAGAATTAGATAAATGG
GAAAAAAATTGGTTAAGGCCAGGGGGAAAGAAACAATATAAACTAAAA
CATATAGTATGGGCAAGCAGGGAGCTAGAACGATTGCAGTTAATCCT
GGCCTTTAGAGACATCAGAAGGCTGTAGACAAACTGGGACAGCTA
CAACCACCCCTCAGACAGGATCAGAAGAACTTAGATCATTATATAAT
ACAATAGCAGTCCTCTATTGTGTGCATCAAAGGATAGATGTAAAAGAC
ACCAAGGAAGCCTTAGATAAGATAGAGGAAGAGCAAAACAAAAGTAAG
AAAAAGGCACAGCAAGCAGCAGCTGACACAGGAAACAACAGCCAGGTC
AGCCAAAATTACCCCTATAGTGCAGAACCTCCAGGGGCAAATGGTACAT
CAGGCCATATCACCTAGAACTTTAAATGCATGGTAAAAGTAGTAGAA
GAGAAGGCTTCAGCCCCAGAAGTAATACCCATGTTTCAGCATTATCA
GAAGGAGCCACCCCACAAGATTAAATACCATGCTAAACACAGTGGGG
GGACATCAAGCAGCCATGCAAATGTTAAAAGAGACCATAATGAGGAA
GCTGCAGAATGGGATAGATTGCATCCAGTGCAAGCAGGGCCTATTGCA
CCAGGCCAGATGAGAGAACCAAGGGGAAGTGACATAGCAGGAACTACT
AGTACCCCTCAGGAACAAATAGGATGGATGACACATAATCCACCTATC
CCAGTAGGAGAAATCTATAAAAGATGGATAATCTGGGATTAAATAAA
ATAGTAAGAATGTATAGCCCTACCAGCATTCTGGACATAAGACAAGGA
CCAAAGGAACCCCTTAGAGACTATGTAGACCGATTCTATAAAACTCTA
AGAGCCGAGCAAGCTTCACAAGAGGTAAAAAATTGGATGACAGAAACC
TTGTTGGTCCAAAATGCGAACCCAGATTGTAAGACTATTTAAAAGCA
TTGGGACCAGGAGCGACACTAGAAGAAATGATGACAGCATGTCAGGGA
GTGGGGGGACCCGGCCATAAGCAAGAGTTTGCTGAAGCAATGAGC
CAAGTAACAAATCCAGCTACCATAATGATAACAGAAAGGAATTAGG
AACCAAAGAAAGACTGTTAAGTGGCAATTGTGGCAAAGAAGGGCAC
ATAGCCAAAATTGCAAGGGCCCCTAGGAAAAAGGGCTGGAAATGT
GGAAAGGAAGGACACCAAATGAAAGATTGTACTGAGAGACAGGCTAAT
TTTTAGGAAAGATCTGGCCTTCCCACAAGGGAAAGGCCAGGGATT
CTTCAGAGCAGACAGAGCCAACAGCCCCACCAGAAGAGAGCTCAGG
TTGGGGAAAGAGACAACAACCCCTCTCAGAACAGCAGGAGCCGATAGAC
AAGGAACGTATCCTTAGCTCCCTCAGATCACTCTTGGCAGCGAC
CCCTCGTCACAATAAGATAGGGGGCAATTAAAGGAAGCTCTATTAG
ATACAGGAGCAGATGATACAGTATTAGAAGAAATGAATTGCCAGGAA
GATGGAAACCAAAATGATAGGGGGATTGGAGGTTTATCAAAGTAA
GACAGTATGATCAGATACTCATAGAAATCTGCAGGACATAAAGCTATAG
GTACAGTATTAGTAGGACCTACACCTGTCAACATAATTGGAAAGAAATC
TGTTGACTCAGATTGGCTGCACTTTAAATTCCCATTAGTCCTATTG
AGACTGTACCAAGTAAAATTAAAGCCAGGAATGGATGGCCCAAAG

FIGURE 7A
(SEQ ID NO: 6)

ATGGGTGCGAGAGCGTCAGTATTAGCGGCGAAAATTAGACAAATGG
GAAAAAAATTGGTTAAGGCCA~~G~~GGGGAAAGAAAAGATAAGTTAAA
CATATA~~A~~TATGGGCAAGCAGGGAGCTAGAACGATTGCTGTCAATCCT
~~G~~GCCTTTAGAGACAGCAGAGGGCTGTAGACAAATACTGGACAGCTA
CAACCAGCCCTCAGACAGGATCAGAAGAACTTAAATCATTATATAAT
GCAGTAGCAACCCCTATTGTGTACATCAAATATAGAGGTAAGAGAC
ACCAAGGAAGCTTAGACAAGATAGAGGAAGAGCAAAACAAAAGTAAG
AAAAAAAGCACAGCAAGCAGCAGCTGACACAGGAAACGGCAGCCAGGTC
AGCCAAAATTACCCCTATAGTCAGAACCTTCAGGGCAAATGGTACAT
CAAGCCATATCACCTAGAACTTAAATGCATGGTAAAAGTAGTAGAA
GAGAAGGCTTAGGCCAGAAGTAATACCCATGTTTCAGCATTATCA
GAAGGGGCCACCCCCACAAGATTAAACACCATGCTAAACACAGTGGGG
GGACATCAAGCAGCCATGCAAATGTTAAAGAGACTATCAATGAGGAA
GCTGCAGAATGGGATAGATTGCATCCAGTGCA~~A~~GCAGGGCCTATTGCA
CCAGGCCAGATGAGAGAACCAAGGGGAAGTGACATAGCAGGAACCACT
AGTACCCCTCAGGAACAAATAGGATGGATGACAAATAATCCACCTATC
CCAGTAGGAGAAATCTATAAAAGGTGGATAATTCTGGGATTAAATAAA
ATAGTAAGAATGTATAGCCCCATCAGCATTCTGGACATAAGACAAGGA
CCTAAGGAACCCCTTAGAGACTATGTAGACCGGTTCTATAAAACTCTA
AGAGCCGAGCAAGCTCACAGGATGTTAAAGGATGACAGAAACC
TT~~G~~CTGGTCCAAAATGCGAACCCAGATTGTTAAACTATTTAAAGCA
TTGGGACCAGCAGCTACACTAGAAGAAATGATGACAGCATGTCAGGGA
GTAGGGGGACCCAGCCATAAAGCAAGAATTGGCTGAAGTAATGAGC
~~CAAGTAACAAATT~~CAGCTACCATAATGCTGCAGAAAGGTAAATTAGG
GACCAAAGAAAAATTGTTAAGTGTTCACACTGTGGCAAAGTAGGGCAC
ATAGCCAAAATTGCAGGGCCCTAGGAAAAAGGGCTTTGGAAATGT
GGAAAGGAAGGACACCAAATGAAAGATTGCACT~~A~~CTGAGGGACGACAG
GCTAATTAGGGAAAATCTGGCCTCCCACAAGGGAAAGGCCAGGG
AACTTCTTCAGAGCAGACCAGAGCCAACAGCCCCACCAGAAGAGAGC
TTCAGGTTGGGAAGAGACAACTCCCTCTCAGAACAGCAGGAGAAGATA
GACAAGGAACTGTATCCTTAGCTCCCTCAAATCACTCTTGGCAAC
GACCCATCGTCACAGTAAGATAGGGGGCAATTAAAGGAAGCTCTAT
TAGATACAGGAGCAGATGATACAGTATTAGAAGAAATGAATTGCCAG
GAAAATGGAAACCAAAATGATAGGGGGATTGGAGGTTTATCAAAG
TAAGGCAGTATGATCAAATACTCATAGAAATCTGTGGACATAAAGCTA
TAGGTACAGTATTAGTAGGACCTACACCTGTCAACATAATTGGAAGAA
ATCTGTTGACTCAGATTGGTTGCACCTTAAATTCCATTAGTCCTA
TTGAAACT~~A~~TACCAAGTAAATTAAAGCCAGGAATGGATGGCCAAAAG
TTAAACAATGGCCATTGACAGAGGAAAAAATAAAAGCATTG~~A~~TAGAAA
TTTGTACAGAAATGGAAAAGGAAGGAAAAATTCAAAAATTGGGCCTG

FIGURE 7B

AAAATCCATACAATACTCCAGTATTCGCATAAAGAAAAANGACAGTA
CTAAATGGAGAAA

FIGURE 8

(SEQ ID NO: 7)

ATGGGTGCGAGAGCGTCAGTATTAAGCGGCCGAAAATTAGACAAATGG
GAAAAAAATTGGTTAAGGCCAGGGGAAAGAAAAGATATAAGTTAAAA
CATATAATATGGCAAGCAGGGAGCTAGAACGATTGCTGTCAATCCT
GCCCTTTAGAGACAGCAGAGGGCTGTAGACAAATACTGGACAGCTA
CAACCAGCCCTCAGACAGGATCAGAAGAACTTAAATCATTATATAAT
GCAGTAGCAACCCCTCTATTGTGTACATCAAATATAGAGGTAAGAGAC
ACCAAGGAAGCTTAGACAAGATAGAGGAAGAGCAAAACAAAAGTAAG
AAAAAAAGCACAGCAAGCAGCAGCTGACACAGGAAACGGCAGCCAGGTC
AGCCAAAATTACCCCTATAGTGCAGAACCTTCAGGGCAAATGGTACAT
CAAGCCATATCACCTAGAACTTTAAATGCATGGTAAAAGTAGTAGAA
GAGAAGGCTTTAGCCCAGAAGTAATACCCATGTTTCAGCATTATCA
GAAGGAGCCACCCCCACAAGATTAAACACCATGCTAAACACAGTGGGG
GGACATCAAGCAGCCATGCAAATGTTAAAAGAGACTATCAATGAGGAA
GCTGCAGAATGGGATAGATTGCATCCAGTGCAAGCAGGGCTATTGCA
CCAGGCCAGATGAGAGAACCAAGGGGAAGTGACATAGCAGGAACCACT
AGTACCCCTCAGGAACAAATAGGATGGATGACAAATAATCCACCTATC
CCAGTAGGAGAAATCTATAAAAGGTGGATAATTCTGGGATTAAATAAA
ATAGTAAGAATGTATAGCCCCATCAGCATTCTGGACATAAGACAAGGA
CCTAAGGAACCCCTTAGAGACTATGTAGACCGGTTCTATAAAACTCTA
AGAGCCGAGCAAGCTTCACAGGATGTAAAAAATTGGATGACAGAAACC
TTGCTGGTCCAAAATGCGAACCCAGATTGTTAAAACATTAAAGCA
TTGGGACCAGCAGCTACACTAGAAGAAATGATGACAGCATGTCAGGG
GTAGGGGGACCCAGCCATAAAGCAAGAATTGGCTGAAGCAATGAGC
CAAGTAACAAATTTCAGCTACCATATAATGCTGCAGAAAGGTAAATTAGG
GACCAAAAGAAAAATTGTTAAGTGTTCAACTGTGGCAAAGTAGGGCAC
ATAGCCAAAATTGCAGGGCCCTAGGAAAAGGGCTTTGGAAATGT
GGAAAGGAAGGACACCAAATGAAAGATTGCACACTTGAGGGACGACAG
GCTAATTAGGGAAAATCTGGCCTTCCCACAAGGGAAAGGCCAGGG
AACTTCTTCAGAGCAGACCAGAGCCAACAGCCCCACCAGAAGAGAGC
TTCAGGTTGGGAAGAGACAACTCCCTCTCAGAACAGCAGGAGAAGATA
GACAAGGAACTGTATCCTTAGCTCCCTCAAATCACTTTGGCAAC
GACCCATCGTCACAGTAAAGATAGGGGGCAATTAAAGGAAGCTCTAT
TAGATACAGGAGCAGATGATACAGTATTAGAAGAAATGAATTGCCAG
GAAAATGGAAACCAAAATGATAGGGGGATTGGAGGTTTATCAAAG
TAAGGCAGTATGATCAAATACTCATAGAAATCTGTGGACATAAGCTA
TAGGTACAGTATTAGTAGGACCTACACCTGTCAACATAATTGGAAGAA
ATCTGTTGACTCAGATTGGTTGCACCTAAATTCCATTAGTCCTA
TTGAAACTATACCAAGTAAATTAAAGCCAGGAATGGATGGCCAAAAG
TTAAACAATGGCCATTGACAGAGGAAAAAATAAAGCATTGATAGAAA
TTTGTACAGAAATGGAAAAGGAAGGAAAAATT

FIGURE 9

AAAGCAAGAGTTTGG**T**TGAAGCAATGAGC (SEQ ID NO: 8)

AAAGCAAGAATTGGCTGAAG**T**AATGAGC (SEQ ID NO: 9)

AAAGCAAGAGTTGGCTGAAGCAATGAGC (SEQ ID NO: 10)

FIGURE 10

CA SP1

K-A-R-L-M-|A-E-A-L-K (SEQ ID NO: 11)